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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,601	06/20/2003	Eric Anderson	100202201-1	5490

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EXAMINER	
SAEED, USMAAN	
ART UNIT	PAPER NUMBER
2166	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/600,601	ANDERSON, ERIC	
	Examiner	Art Unit	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,17-22,24-27 and 29-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17-22,24-27 and 29-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. In view of the Appeal Brief filed on 1/03/2007, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options.

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193 (b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15, 17-22, 24-27, and 29-34 are rejected under 35 U.S.C. 102(b) as being anticipated by **Borowsky et al** (**Borowsky** hereinafter) (U.S. Patent 6,381,619).

With respect to claim 1, **Borowsky** teaches **a method for performing adaptive migration and execution, the method comprising:**

"obtaining a plan" as the migration plan generator develops a plan that leads to the lowest contention for the system (**Borowsky** Col 2, Lines 35-36). The reference teaches that the plan is being developed for migration. **"generated by a planner executable in a computer"** as the present invention provides a computer data storage system with a migration plan generator which includes a "Simple" migration planner which provides for making terminal moves until no further terminal moves are possible based on random, preset, or functional ordering (**Borowsky** Col 2, Lines 15-20).

"adapting the plan to satisfy migration constraints" as the migration plan generator 100, the initial configuration data 110, the goal configuration data 112, and the set of constraints 114 are provided to a migration planner 116. The migration planner 116 either fails to develop a migration plan and exits to "fail" block 118 or produces a viable migration plan 120 (**Borowsky** Col 5, Lines 6-11). The plan being produced by the migration plan generator is only developed/adopted when the set of constraints provided to the planner are satisfied.

"executing at least one move of a data chunk in the plan" as the data stores are moved, or migrated, among the storage devices under the direction of a control 28 (**Borowsky** Col 3, Lines 49-51).

"feeding back information relating to the to the planner; and modifying the plan by the planner in response to the information" as (**Borowsky** Figure 5).

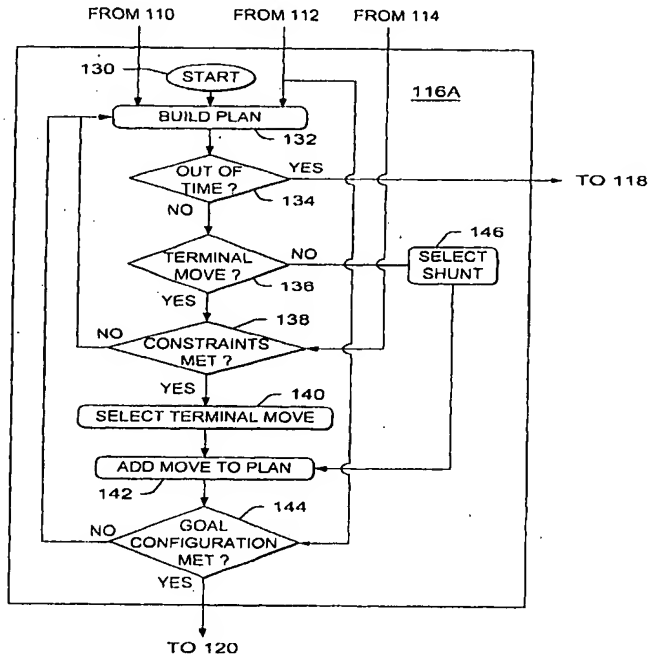

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal

configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

With respect to claim 2, **Borowsky** further teaches **"the method of claim 1, wherein the steps in the method are repeated until no moves are pending"** as the present invention provides a computer data storage system with a migration plan generator which includes a "Simple" migration planner which provides for making terminal moves until no further terminal moves are possible based on random, preset, or functional ordering (**Borowsky** Col 2, Lines 15-20).

With respect to claim 3, **Borowsky** further teaches **"the method of claim 2, further comprising: waiting for all in-progress executions of moves to complete after no moves are pending"** as after a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The reference teaches that the program processes/executes all the possible moves and it has to wait for all the executions in order to check if the configurations have been met.

With respect to claim 4, **Borowsky** further teaches **"the method of claim 1, further comprising: waiting for a move to complete if the adaptation of the plan**

indicates no moves meet the migration constraints" as establishing that no other moves are possible after the store E move (**Borowsky** Col 6, Lines 47-48). The set of constraints 114 prevents certain moves (**Borowsky** Col 4, Line 54). This means that after the completion of the store E move, no other moves are possible and constraints play a part in preventing certain moves.

With respect to claim 5, **Borowsky** further teaches **"the method of claim 1, further comprising:**

"estimating load value information" as the load placed by the move on the system should be minimized (in terms of data stores moved, time taken (parallel or sequential), bandwidth used, or similar metric) (**Borowsky** Col 6, Lines 24-27). **"using the load value information"** as the load placed by the move on the system should be minimized (in terms of data stores moved, time taken (parallel or sequential), bandwidth used, or similar metric) (**Borowsky** Col 6, Lines 24-27). **"assist in modifying the plan"** as an alternative migration plan would have been to move the store B from device 1 to the device 3 and move the store D from the device 2 to the device 1 (**Borowsky** Col 6, Lines 58-61). Figure 6 also have all the other different/modified/new plans that can be selected for use of migration. It is using the load value to find a modified/different/new plan since the constraints to select a plan contain a capacity constraint which examiner interprets as a load constraint.

With respect to claim 6, **Borowsky** further teaches **the method of claim 1, wherein adapting the plan comprises:**

selecting at least one step from the following

"pruning at least one move that violates a migration constraint" as the set of constraints 114 contains the capacities of the data storage devices, the capacities of the data stores, the bandwidth, movement rate, and other limitations on the moves (**Borowsky** Col 4, Lines 51-53). Therefore these set of constraints are being used in the pruning of the moves.

"selecting a largest set of moves that do not violates a migration constraint; and skipping a move that violates a migration constraint" as if a terminal move is possible, the program proceeds to the "constraints met?" decision block 138. The "constraints met?" decision block 138 receives the set of constraints 114 to determine whether or not the constraints have been met. If they have not been met, the program returns to the "build plan" block 132. If the constraints have been met, the program proceeds to the "select terminal move" block 140 (**Borowsky** Col 5, Lines 22-29). If the moves do not violate the migration constraints they are added to the plan and if they violate the constraints they are not added to that plan.

With respect to claim 7, **Borowsky** further teaches **"the method of claim 1, further comprising: treating a data chunk as existing in an old location and new location while a move is in progress"** as the initial configuration system 22, the initial

configuration has device 1 with store A and store B assigned to it, device 2 with store C and store D assigned to it, and device 3 with store E assigned to it.
In the goal configuration system 26, the goal configuration has device 1 with store A, store D, and store E assigned to it, device 2 with store C and store B assigned to it, and device 3 with no data block assigned to it (**Borowsky** Col 3, Lines 40-48). Therefore when a move is in progress it treats the initial and goal configuration, both having the data chunk E since they use memory in old and new locations.

With respect to claim 8, **Borowsky** further teaches **"the method of claim 1, further comprising: pruning moves that violate an access rule when a move is in progress, wherein the pruned moves are not selected for inclusion in the plan"** as there are different blocks of data in the storage system. The access patterns to these blocks of data changes over time. Further, devices may fail or be added or subtracted. Thus, the ultimate goal is a data storage system which is not only able to automatically configure itself, but to reconfigure itself `on-the-fly`; i.e. move stored data around based on changing access patterns (**Borowsky** Col 1 Lines 65-67, Col 2 Lines 1-4). The reference is pruning the moves that are violating the access rules since they are changed and then the reference is reconfiguring these moves based on the changed access patterns/rules. The pruned moved are not included unless they are changed and reconfigured.

With respect to claim 9, **Borowsky** further teaches **"the method of claim 7, wherein the step of treating the data chunk comprises: considering the data chunk as decreasing a per-node free space information at both the old location and the new location when a move is in progress"** as the present invention further provides a computer data storage system with a migration plan generator which includes a "Greedy" migration planner which uses a "contention" metric. The "contention" of a data storage device is defined as the total size of the data stores that need to move onto such data storage device, divided by the amount of free space on such data storage device. The contention of the entire system is the sum of the contention over all the data storage devices. The migration plan generator develops a plan that leads to the lowest contention for the system (**Borowsky** Col 2, Lines 27-36). The free space is decreasing since plan generator s trying for develop a plan, which leads to lowest contention in order to use the least space required.

With respect to claim 10, **Borowsky** further teaches **a method for performing adaptive migration and execution, the method comprising:**

"obtaining a plan" as the migration plan generator develops a plan that leads to the lowest contention for the system (**Borowsky** Col 2, Lines 35-36). The reference teaches that the plan is being developed for migration. **"created by a planner executable in a computer"** as the present invention provides a computer data storage system with a migration plan generator which includes a "Simple" migration planner

which provides for making terminal moves until no further terminal moves are possible based on random, preset, or functional ordering (**Borowsky** Col 2, Lines 15-20).

"determining all valid moves in the plan" as if there is a data storage device that has terminal moves going into it but none going out, then all these terminal moves will be valid, since the data storage device can clearly accommodate all the data stores in the goal configuration (**Borowsky** Col 8, Lines 17-21). The reference is determining the valid moves that the data storage device can handle.

"executing a valid move" as the data stores are moved, or migrated, among the storage devices under the direction of a control 28 (**Borowsky** Col 3, Lines 49-51).
"if at least one additional move is required" as if there is a data storage device that has terminal moves going into it but none going out, then all these terminal moves will be valid, since the data storage device can clearly accommodate all the data stores in the goal configuration (**Borowsky** Col 8, Lines 17-21). The reference is determining the valid moves that the data storage device can handle and it would have additional moves after starting the first move.

"feeding back information relating to the to the planner; and modifying the plan by the planner in response to the information" as (**Borowsky** Figure 5).

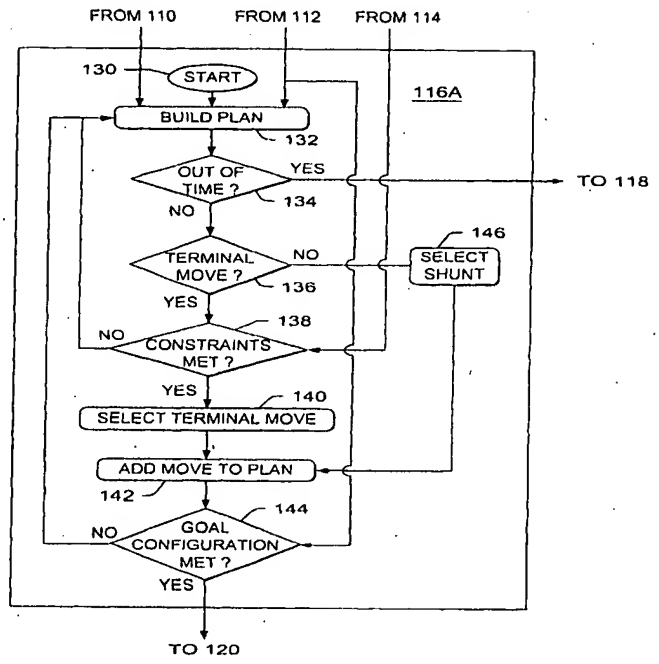

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

With respect to claim 11, **Borowsky** further teaches **"the method of claim 10, further comprising: determining if an executor is available, wherein executing the valid more is performed by the available executor"** as after a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The reference teaches that the program processes/executes all the possible moves and the executor has to be available to execute the moves.

Claim 12 is same as claim 2 and is rejected for the same reasons as applied hereinabove.

Claim 13 is same as claim 3 and is rejected for the same reasons as applied hereinabove.

With respect to claim 14, **Borowsky** further teaches **an article of manufacture, comprising: a machine-readable medium having stored thereon instructions to:**

"obtain a plan" as the migration plan generator develops a plan that leads to the lowest contention for the system (**Borowsky** Col 2, Lines 35-36). The reference teaches that the plan is being developed for migration.

"adapt the plan to satisfy migration constraints" as the migration plan generator 100, the initial configuration data 110, the goal configuration data 112, and the set of constraints 114 are provided to a migration planner 116. The migration planner 116 either fails to develop a migration plan and exits to "fail" block 118 or produces a viable migration plan 120 (**Borowsky** Col 5, Lines 6-11). The plan being produced by the migration plan generator is only developed/adopted when the set of constraints provided to the planner are satisfied.

"execute at least one move of a data chunk in the plan and executing another move" as the data stores are moved, or migrated, among the storage devices under the direction of a control 28 (**Borowsky** Col 4, Lines 49-51).

"modifying the plan based on feedback configuration information regarding in-progress execution of the at least one move" as (**Borowsky** Figure 5).

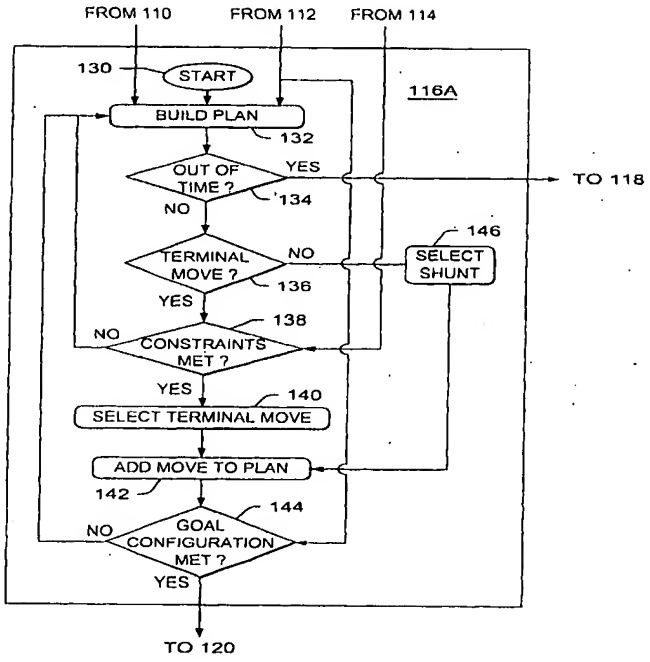

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

With respect to claim 15, **Borowsky** further teaches **an apparatus for adaptive migration, the apparatus comprising:**

"a planner configured to generate a migration plan based upon configuration information" as the present invention provides a computer data storage system with a migration plan generator which includes a "Simple" migration planner which provides for making terminal moves until no further terminal moves are possible based on random, preset, or functional ordering (**Borowsky** Col 2, Lines 15-20). Fig 1 provides an overview of the invention and its migration from an initial configuration to a goal configuration (**Borowsky** Col 2, Lines 65-67). There is migration planner, which provides migration plan for making the moves. These moves are based on configuration information since initial configuration is being changed to final configuration.

"an adapter configured to receive the plan from the planner, to receive migration constraints information, target configuration information and current configuration information, and to transmit configuration information to the planner" as in the migration planner 116B of FIG. 6, the program begins at "start" block 150 and moves to select a plan in "select plan" block 152. The "select plan" block receives the initial configuration data 110, the goal configuration data 112, and the set of constraints 114 (**Borowsky** Col 8, Lines 36-40). The planner is receiving all the information about the initial/current configuration, goal/target configurations and the set of constraints.

"at least one executor configured to execute a move in the plan" as the plan might have to be executed in one hour. With a very slow data storage device, like a tape drive, and a large data store that needs to be moved, it might not be feasible to move the data store onto and off the tape drive because that may take more time than the hour set for completing the plan (**Borowsky** Col 5 Lines 1-5). Therefore the reference includes an executor, which executes a plan for moving data. **"wherein the configuration information relates to execution of the moves"** as after a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64 and Figures 2 and 5).

Claim 16 (Cancelled).

Claim 17, 18, and 19 are essentially the same as claim 5 except they set forth the claimed invention as an apparatus and are rejected for the same reasons as applied hereinabove.

With respect to claim 20, **Borowsky** further teaches **"the apparatus of claim 15, wherein the adapter iteratively obtains plans from the planner until no moves are pending"** as after a program has processed the possible moves, the then current

configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The reference keeps on selecting a different plan until the configuration/(moves) have been met.

The present invention further provides a computer data storage system with a migration plan generator which includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68).

Claim 21 is essentially the same as claim 3 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 22 is essentially the same as claim 4 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 23 (Cancelled).

Claim 24 is essentially the same as claim 6 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 25 is essentially the same as claim 7 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 26 is essentially the same as claim 8 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 27 is essentially the same as claim 9 except it sets forth the claimed invention as an apparatus and is rejected for the same reasons as applied hereinabove.

Claim 28 (Cancelled).

With respect to claim 29, **Borowsky** teaches **the method of claim 1, further comprising:**

"executing at least a second move of a data chunk" as after a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The present invention further provides a computer data storage system with a migration plan generator which includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68).

"feeding back information relating to the execution of the at least second move to the planner" as (**Borowsky** Figure 5).

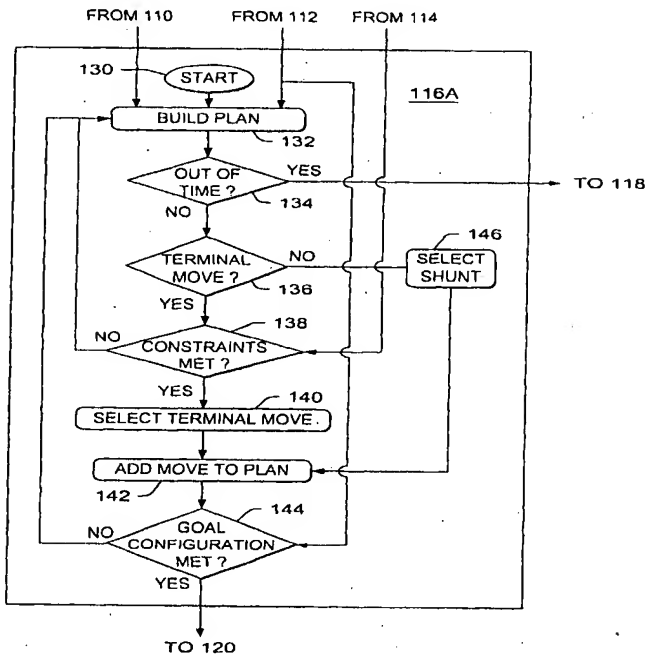

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

The present invention further provides a computer data storage system with a migration plan generator which includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68).

"further modifying the plan by the planner in response to the information relating to the execution of the at least second move" as (**Borowsky** Figure 5).

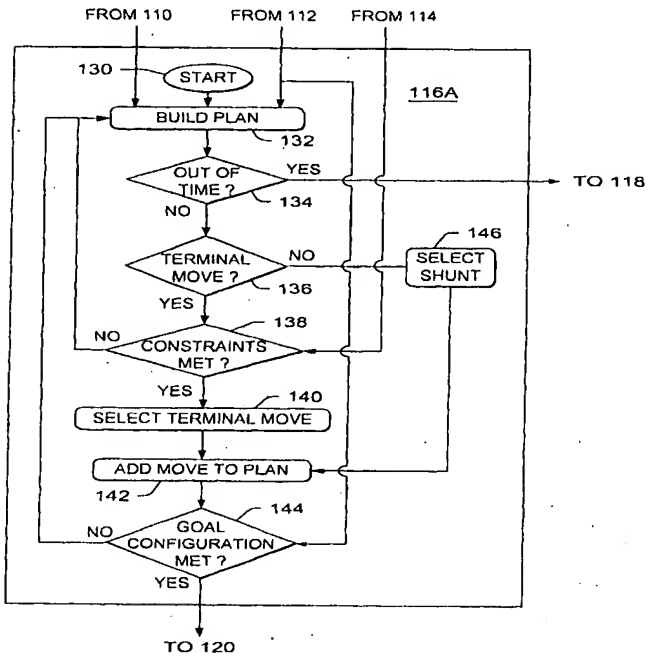

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If

the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

The present invention further provides a computer data storage system with a migration plan generator which includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68).

With respect to claim 30, **Borowsky** teaches **the method of claim 1, wherein execution of the at least one move is performed by an executor, the method further comprising:**

"waiting for the executor to complete the at least one move"

"determining whether another move is to be executed" as the data stores are moved, or migrated, among the storage devices under the direction of a control 28 (**Borowsky** Col 3, Lines 49-51). After a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The present invention further provides a computer data storage system with a migration plan generator which

includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68). These lines teach that all the possible/determined move are being performed.

"wherein modifing the plan is performed in response to determining that the another move is to be executed" as (**Borowsky** Figure 5).

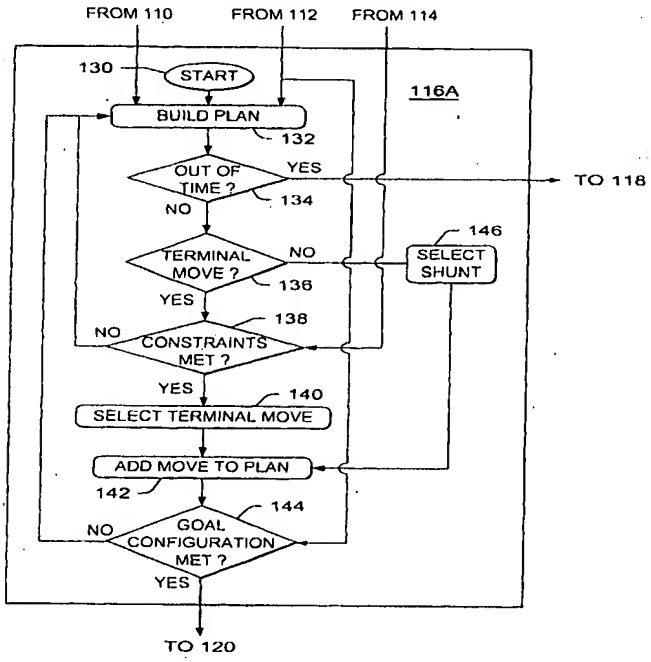

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If the goal configuration is not met, the program returns to the "build plan" block 132, and

if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another move is being added to the plan, the plan is being modified.

Claim 32 is essentially the same as claim 30 except it sets forth the claimed invention as an article of manufacture and is rejected for the same reasons as applied hereinabove.

With respect to claim 31, **Borowsky** teaches **the method of claim 1, further comprising:**

"tracking the information relating to the execution of the at least one move by an adapter that also adapts the plan to satisfy migration constraints" as the data stores are moved, or migrated, among the storage devices under the direction of a control 28 (**Borowsky** Col 3, Lines 49-51). After a program has processed the possible moves, the then current configuration is compared with the goal configuration in the "goal configuration met?" decision block 172. If the goal configuration has not been met, the program proceeds back to the "select plan" block 152 and, if it has it, exits as the migration plan 120 (**Borowsky** Col 5, Lines 59-64). The present invention further provides a computer data storage system with a migration plan generator which includes a "Meta" migration planner which shifts from one planner to another based on the planner's performance (**Borowsky** Col 2, Lines 55-68).

The migration planner 116B of FIG. 6, the program begins at "start" block 150 and moves to select a plan in "select plan" block 152. The "select plan" block receives the initial configuration data 110, the goal configuration data 112, and the set of constraints 114 (**Borowsky** Col 8, Lines 36-40).

"wherein feeding back the information is performed by the adapter to the planner" as (**Borowsky** Figure 5).

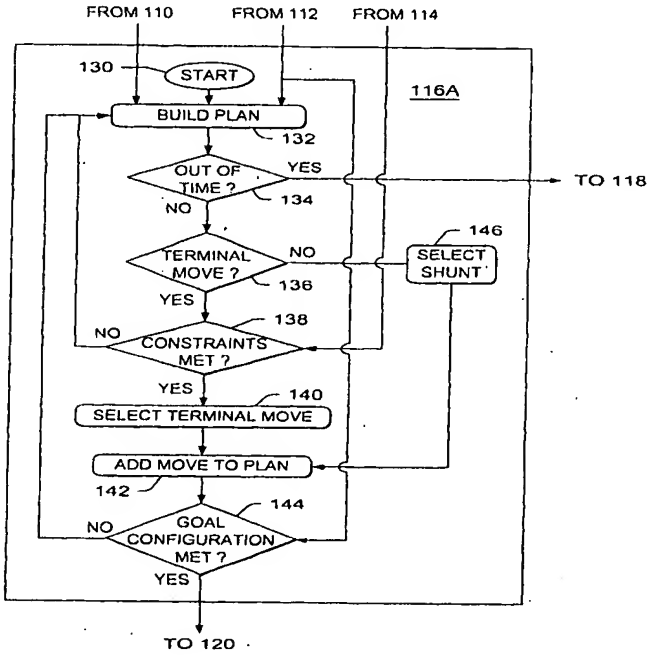

FIG. 5

Borowsky teaches once a terminal move is selected, it is added to the plan in an "add move to plan" block 142. The configuration after the added move is compared with the goal configuration data 112 in a "goal configuration met?" decision block 144. If

the goal configuration is not met, the program returns to the "build plan" block 132, and if it is, it exits as the migration plan 120 (**Borowsky** Col 5, Lines 30-36). These lines and figure 5 teaches a feedback mechanism which send a feedback that goal configurations are not being met and to that to select another move. When a different/another mover is being added to the plan, the plan is being modified.

With respect to claim 33, **Borowsky** teaches **the article of claim 14, wherein the machine-readable medium further contains instructions to:**

"estimate load information associated with the plan" as the load placed by the move on the system should be minimized (in terms of data stores moved, time taken (parallel or sequential), bandwidth used, or similar metric) (**Borowsky** Col 6, Lines 24-27).

"wherein modifying the plan is further based on the estimated load information" as the load placed by the move on the system should be minimized (in terms of data stores moved, time taken (parallel or sequential), bandwidth used, or similar metric) (**Borowsky** Col 6, Lines 24-27). An alternative migration plan would have been to move the store B from device 1 to the device 3 and move the store D from the device 2 to the device 1 (**Borowsky** Col 6, Lines 58-61). Figure 6 also have all the other different/modified/new plans that can be selected for use of migration. It is using the load value to find a modified/different/new plan since the constraints to select a plan contain a capacity constraint which examiner interprets as a load constraint.

Claim 34 is essentially the same as claims 31 and 20 and is rejected for the same reason as applied hereinabove.

Response to Arguments

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

See the above rejection for the arguments.

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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April 24, 2007